

INDEX

A

Abrasion Testing of Enamelled Wires in Gaseous and Liquid Refrigerants, Repeated Scrape, by F. F. TRUNZO, G. J. BICH, and G. W. HEWITT.....	675
Accountant's Report.....	53
Acoustical Testing of Mufflers for Halogenated Hydrocarbon and Oil Refrigeration Systems, by A. F. MARTZ, JR., J. L. MARTIN, and W. R. DANIELSON.....	479
Discussion.....	487
Actions of the Governing Bodies (ASRE Council and ASHAE Council).....	4
Affidavit and Consent of Education Department.....	41
Agreement for Consolidation.....	13
Air-Conditioning System, Free Piston Compressor in an, by R. J. McCROY, R. W. KING, and J. H. McNINCH.....	377
Air Cross Flow, Frost Formation and Heat Transfer on a Cylinder Surface in Humid:	
Part I—Experimental Study.....	213
Part II—Theoretical Study and Conclusions.....	229
Air Distribution Systems for Summer Cooling, Evaluation of Three Room, by J. J. REINMANN, ALFRED KOESTEL, and G. L. TUVE.....	717
ALGREN, A. B., and P. M. CHUNG, Frost Formation and Heat Transfer on a Cylinder Surface in Humid Air Cross Flow:	
Part I—Experimental Study.....	213
Part II—Theoretical Study and Conclusions.....	229
An Analysis of Turbine Driven Centrifugal Refrigeration Systems, by W. G. DORSEY, JR.....	349
Discussion.....	353
Anemometer, Omni-Directional Low-Speed Hot-Wire, by J. F. KEMP.....	205
Announcement to All ASHAE Members on the Merger.....	11
Annual Energy Use for Electric Space Heating, by R. L. BOYD.....	259
Discussion.....	266
Annual Meeting, 1959, ASHAE Sixty-fifth (Philadelphia, Pa.).....	47
Accountant's Report.....	53
Awards	
ASHAE-Homer Addams.....	48
F. Paul Anderson Medal.....	48
1959 Award of Merit (Life Members' Club).....	48
By-Law Amendments, ASHAE Proposed.....	62
Committee on Arrangements.....	82
Committee on Research—1958, Annual Report of.....	63
Council, Report of.....	60
Fellows, Certificate Presentation.....	48
Inspectors of Election, Report of.....	74
President, Report of.....	49
Program.....	78
Resolutions Committee, Report of.....	76
Symposiums	
Corrosion and Water Treatment.....	76
Heat Pump Performance.....	76
Hydronics.....	75
Treasurer's Report.....	50
Annual Meeting, 1959, ASHRAE (Lake Placid, New York).....	341
Awards	
Klixon Award for 1958.....	342
Wolverine Award for 1958.....	342
Business Session	
President, Report of.....	341
Meeting Arrangements Committee.....	348
Program.....	343
Annual Report of Committee on Research—1958.....	63

Apple Storage Process and Its Requirements on Refrigeration Structures and Systems, Controlled Atmosphere, by J. W. ZAHRADNIK	589
ASH, R. S., Evaporative Cooling for Common Storages of Fruits and Vegetables	571
ASHRAE Proposed By-Law Amendments	62
ASHRAE Sixty-fifth Annual Meeting, 1959 (Philadelphia, Pennsylvania)	47
Ashley, C. M., Discussion on Acoustical Testing of Mufflers for Halogenated Hydrocarbon and Oil Refrigeration Systems	487
Discussion on Annual Energy Use for Electric Space Heating	267
Discussion on Investigation and Control of Refrigerator Noise	468
Ashley, C. M., Proposed ASHRAE Standards for the Measurement of Sound from Equipment	601
ASHRAE Annual Meeting, 1959 (Lake Placid, New York)	341
ASHRAE Standards for the Measurement of Sound from Equipment, Proposed, by C. M. ASHLEY	601
Atmosphere Apple Storage Process and Its Requirements on Refrigeration Structures and Systems, Controlled, by J. W. ZAHRADNIK	589
Automatic Computer for Fan Testing, by C. H. POUNTNEY, JR. and D. W. SKIPWORTH	393
Awnings, Heat Gain through Windows Shaded by Metal, by NECATI OZISIK and L. F. SCHUTRUM	311

B

BAHNFLETH, D. R., and J. R. WRIGHT, Supply Outlet Locations for Basement Heating	137
BAHNFLETH, D. R., Discussion on Omni-Directional Low-Speed Hot-Wire Anemometer	211
BAILLIF, E. A., and J. P. LAUGHLIN, Investigation and Control of Refrigerator Noise	443
BAKKER, G. A., Discussion on Evaluation of Three Room Air Distribution Systems for Summer Cooling	732
Ballot for Officers, 1959 (ASHRAE)	74
Ballots Cast, Total Number of (ASHRAE and ASRE)	34
Basement Heating, Supply Outlet Locations for, by J. R. WRIGHT and D. R. BAHNFLETH	137
BASTIAN, L. C., Discussion on Investigation and Control of Refrigerator Noise	469
BEACH, W. A., R. W. SAGE, and H. F. SCHROEDER, Effect of Fuel Composition on Oil Burner Noise	627
BEDFORD, THOMAS, Discussion on Environment Reactions in the 80 to 105 F Zone	131
BEDFORD, THOMAS, Research on Heating and Ventilation in Relation to Human Comfort	83
BICH, G. J., G. W. HEWITT, and F. F. TRUNZO, Repeated Scrape Abrasion Testing of Enameled Wires in Gaseous and Liquid Refrigerants	675
BIEHN, G. L., Discussion on Evaluation of Filters for Removing Irritants from Polluted Air	415
BINDER, R. C., Some Methods for Investigating Noise from Compressors Used on Household Refrigerators	471
BOLING, CECIL, Report of President (ASHRAE)	341
BOYD, R. L., Annual Energy Use for Electric Space Heating	259
BOYLAN, W. H., Discussion on Effect of Fuel Composition on Oil Burner Noise	633
BROWN, H. C., Discussion on Downward Heat Transfer through a Joist Space	245
BROWN, W. G., Discussion on a New Method of Chimney Design and Performance Evaluation	439
BRYAN, W. L., Discussion on an Analysis of Turbine Driven Centrifugal Refrigeration Systems	353
BUCHANAN, R. S., Discussion on Investigation and Control of Refrigerator Noise	469
BUCHBERG, HARRY, D. LEBELL, and W. B. DRAKE, Load Calculations Using Pre-tabulated Admittance Functions	515
Transmit Admittance Functions for Typical Composite Wall Sections	523
BUCHBERG, HARRY, Discussion on a New Method for Calculating Radiant Exchanges	330
Discussion on Large-Scale Wall Heat-Flow Measuring Apparatus	550
Discussion on Solar Radiant Gains through Directional Glass Exposure	513

BUEHLER, LEON, JR., Discussion on Controlled Atmosphere Apple Storage Process and Its Requirements on Refrigeration Structures and Systems.....	596
Bulletins	
Corrosion and Water Treatment.....	76
Cryogenics.....	343
Heat Pump Performance.....	76
Hydronics.....	75
Industrial Ventilation.....	342
BURKE, J. J., Discussion on an Analysis of Turbine Driven Centrifugal Refrigeration Systems.....	353
By-Laws, Consolidated Society	
Amendments.....	30
Board of Directors and Officers.....	22
Chapters and Regions.....	29
Committees.....	25
Elections.....	24
Fees and Annual Dues.....	21
Funds.....	30
Government.....	18
Incorporation.....	18
Interim Provisions.....	31
Meetings.....	24
Membership.....	19
By-Laws for Proposed Consolidated Society AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR-CONDITIONING ENGINEERS, INC.....	18
C	
CANOVA, FRED, Discussion on Annual Energy Use for Electric Space Heating.....	267
CASWELL, H. E., and F. J. WIESNER, JR., Effects of Refrigerant Properties on Centrifugal Compressor Impeller Dimensions and Stage Performance.....	355
Centrifugal Compressor Impeller Dimensions and Stage Performance, Effects of Refrigerant Properties on, by F. J. WIESNER, JR. and H. E. CASWELL.....	355
Centrifugal Refrigeration Systems, An Analysis of Turbine Driven, by W. G. DORSEY, JR.....	349
Certificate of Consolidation.....	42
CHADDOCK, J. B., Discussion on Proposed ASHRAE Standards for the Measurement of Sound from Equipment.....	610
Chimney Design and Performance Evaluation, A New Method of, by W. C. MOFFAT and W. G. COLBORNE.....	431
Chimney Performance, Fundamental Analysis of, by W. G. COLBORNE and W. C. MOFFATT.....	417
CHUNG, P. M., and A. B. ALGREN, Frost Formation and Heat Transfer on a Cylindrical Surface in Humid Air Cross Flow:	
Part I—Experimental Study.....	213
Part II—Theoretical Study and Conclusions.....	229
CHUNG, P. M., and C. E. LUND, Downward Heat Transfer through a Joist Space.....	245
COLBORNE, W. G., and W. C. MOFFATT, A New Method of Chimney Design and Performance	
Fundamental Analysis of Chimney Performance.....	431
Combustion Noise in Oil-Burning Equipment, Low Frequency, by G. J. SANDERS and W. E. LAWRIE.....	417
Comfort, Research on Heating and Ventilation in Relation to Human, by THOMAS BEDFORD.....	181
Committee on Arrangements (ASHAE Sixty-fifth Annual Meeting, Philadelphia, Pa.).....	83
Committee on Research—1958, Report of.....	82
Committees, Names of General.....	63
Comparison of Fluoroalkane Absorption Refrigerants, by B. J. EISEMAN, JR. Discussion.....	25
Compressor Impeller Dimensions and Stage Performance, Effects of Refrigerant Properties on Centrifugal, by F. J. WIESNER, JR. and H. E. CASWELL.....	635
Compressor in an Air-Conditioning System, Free Piston, by R. J. McCORMICK, R. W. KING, and J. H. McNINCH.....	649
	355
	377

Compressors, Estimating Water Content of Certain Dried but Uncharged Hermetic Refrigerating, by H. M. ELSEY, J. B. KELLEY, and R. B. SHARPE.....	651
Compressors Used on Household Refrigerators, Some Methods for Investigating Noise from, by R. C. BINDER.....	471
Computers for Fan Testing, Automatic, by C. H. POUNTNEY, JR. and D. W. SKIPWORTH.....	393
Condensation between the Panes of Double Windows, by A. GRANT WILSON and E. S. NOWAK.....	551
Discussion.....	570
Conductivity Measurement of Dry and Moist Materials, Thermal, by W. WOODSIDE.....	291
Conferences (ASHRAE)	
Cryogenics (V. J. JOHNSON, Chairman).....	343
Domestic Refrigerator Engineering (F. A. NOLL, Chairman).....	342
Industrial Ventilation (G. B. PRIESTER, Moderator).....	342
Consolidated By-Laws.....	18
Consolidation Documents.....	13
Consolidation, Story of.....	1
Controlled Atmosphere Apple Storage Process and Its Requirements on Refrigeration Structures and Systems, by J. W. ZAHRADNIK.....	589
Discussion.....	596
Cooling, Evaluation of Three Room Air Distribution Systems for Summer, by J. J. REINMANN, ALFRED KOESTEL, and G. L. TUVE.....	717
Cooling for Common Storages of Fruits and Vegetables, Evaporative, by R. S. ASH.....	571
Corrosion and Water Treatment Bulletin.....	76
Council (ASHAE), Report of.....	60
CRAMER, R. D., and L. W. NEUBAUER, Solar Radiant Gains through Directional Glass Exposure.....	499
Cryogenics Bulletin.....	343
Cylinder Surface in Humid Air Cross Flow, Frost Formation and Heat Transfer on a:	
Part I—Experimental Study.....	213
Part II—Theoretical Study and Conclusions.....	229

D

DANIELSON, W. A., Discussion on Evaporative Cooling for Common Storages of Fruits and Vegetables.....	587
DANIELSON, W. R., A. F. MARTZ, JR., and J. L. MARTIN, Acoustical Testing of Mufflers for Halogenated Hydrocarbon and Oil Refrigeration Systems.....	479
Determination of the Effectiveness of Window Shading Materials on the Reduction of Solar Radiation Heat Gain, by R. C. JORDAN and J. L. THRELKELD.....	683
Discussion.....	695
DIVERS, R. T., Discussion on Estimating Water Content of Certain Dried but Uncharged Hermetic Refrigerating Compressors.....	660
Discussion on Repeated Scrape Abrasion Testing of Enamelled Wires in Gaseous and Liquid Refrigerants.....	682
Documents, Consolidation.....	13
DOEG, R. W., Discussion on Investigation and Control of Refrigerator Noise.....	468
DORSEY, W. G., JR., An Analysis of Turbine Driven Centrifugal Refrigeration Systems.....	349
DORSEY, W. G., JR., Discussion on Effects of Refrigerant Properties on Centrifugal Compressor Impeller Dimensions and Stage Performance.....	374
Downward Heat Transfer through a Joist Space, by P. M. CHUNG and C. E. LUND	
Discussion.....	245
Discussion.....	258
DRAKE, W. B., HARRY BUCHBERG, and D. LEBELL, Load Calculations Using Prefabulated Admittance Functions.....	515
Transfer Admittance Functions for Typical Composite Wall Sections.....	523
Dried but Uncharged Hermetic Refrigerating Compressors, Estimating Water Content of Certain, by H. M. ELSEY, J. B. KELLEY, and R. B. SHARPE.....	651
Dry and Moist Materials, Thermal Conductivity Measurement of, by W. WOODSIDE.....	291

E

Effect of Fuel Composition on Oil Burner Noise, by W. A. BEACH, R. W. SAGE, and H. F. SCHROEDER.....	627
Discussion.....	632
Effect of Pressure and Temperature on the Viscosity of Refrigerants in the Vapor Phase, by C. Z. KAMIEN and O. W. WITZELL.....	663
Effects of Refrigerant Properties on Centrifugal Compressor Impeller Dimensions and Stage Performance, by F. J. WIESNER, JR. and H. E. CASWELL.....	355
Discussion.....	374
EISEMAN, B. J., JR., Comparison of Fluoroalkane Absorption Refrigerants.....	635
EISEMAN, B. J., JR., Discussion on Repeated Scrape Abrasion Testing of Enameled Wires in Gaseous and Liquid Refrigerants.....	681
Electric Space Heating, Annual Energy Use for, by R. L. BOYD.....	259
ELSEY, H. M., J. B. KELLEY, and R. B. SHARPE, Estimating Water Content of Certain Dried but Uncharged Hermetic Refrigerating Compressors.....	651
Enameled Wires in Gaseous and Liquid Refrigerants, Repeated Scrape Abrasion Testing of, by F. F. TRUNZO, G. J. BICH, and G. W. HEWITT.....	675
Environment Reactions in the 80 to 105 F Zone, by B. H. JENNINGS and BARUCH GIVONI.....	115
Discussion.....	129
Environments, Metabolic Patterns in Stressful, by NELLO PACE.....	101
Estimating Water Content of Certain Dried but Uncharged Hermetic Refrigerating Compressors, by H. M. ELSEY, J. B. KELLEY, and R. B. SHARPE.....	651
Discussion.....	660
Evaluation of Filters for Removing Irritants from Polluted Air, by N. A. RICHARDSON and W. C. MIDDLETON.....	401
Discussion.....	415
Evaluation of Three Room Air Distribution Systems for Summer Cooling, by J. J. REINMANN, ALFRED KOESTEL, and G. L. TUVE.....	717
Discussion.....	732
Evaporative Cooling for Common Storages of Fruits and Vegetables, by R. S. ASH.....	571
Discussion.....	587
EVERETT, JOHN, JR., Discussion on Annual Energy Use for Electric Space Heating.....	266
Experimental Study of Grille Noise Characteristics, by B. H. MARVET.....	613
Discussion.....	625

F

Fan Testing, Automatic Computer for, by C. H. POUNTNEY, JR. and D. W. SKIPWORTH.....	393
Filters for Removing Irritants from Polluted Air, Evaluation of, by N. A. RICHARDSON and W. C. MIDDLETON.....	401
FLACK, PETER, Discussion on Environment Reactions in the 80 to 105 F Zone	132
FLEISHER, WALTER L., In Memoriam (1880-1959).....	747
Fluoroalkane Absorption Refrigerants, Comparison of, by B. J. EISEMAN, JR.	635
FONTAINE, W. E., Discussion on Investigation and Control of Refrigerator Noise	468
Free Piston Compressor in an Air-Conditioning System, by R. J. McCRORY, R. W. KING, and J. H. McNINCH.....	377
Discussion.....	391
Frost Formation and Heat Transfer on a Cylinder Surface in Humid Air Cross Flow:	
Part I—Experimental Study.....	213
Part II—Theoretical Study and Conclusions.....	229
Fruits and Vegetables, Evaporative Cooling for Common Storages of, by R. S. ASH.....	571
Fuel Composition on Oil Burner Noise, Effect of, by W. A. BEACH, R. W. SAGE, and H. F. SCHROEDER.....	627
Fundamental Analysis of Chimney Performance, by W. G. COLBORNE and W. C. MOFFATT.....	417
Discussion.....	439

G

Gaseous and Liquid Refrigerants, Repeated Scrape Abrasion Testing of Enameled Wires in, by F. F. TRUNZO, G. J. BICH, and G. W. HEWITT.....	675
Gas-Fired Residential Heating Equipment, Pulsations in Single-Port, by C. F. SPEICH and A. A. PUTNAM.....	153
Gas-Fired Residential Heating Equipment, Suppression of Oscillations in, by C. F. SPEICH and A. A. PUTNAM.....	489
GEBHART, BENJAMIN, A New Method for Calculating Radiant Exchanges.....	321
GIVONI, BARUCH, and B. H. JENNINGS, Environment Reactions in the 80 to 105 F Zone.....	115
Glass Exposure, Solar Radiant Gains through Directional, by R. D. CRAMER and L. W. NEUBAUER.....	499
Glass with Roller Shades, Heat Flow through, by NECATI OZISIK and L. F. SCHUTRUM.....	695
GOETZ, M. B., Discussion on Free Piston Compressor in an Air-Conditioning System.....	391
GRAHAM, J. B., Discussion on Automatic Computer for Fan Testing.....	400
Grille Noise Characteristics, Experimental Study of, by B. H. MARVET.....	613

H

HAINES, J. E., Discussion on Evaluation of Filters for Removing Irritants from Polluted Air.....	415
Heat-Flow Measuring Apparatus, Large-Scale Wall, by K. R. SOLVASON.....	541
Heat Flow through Glass with Roller Shades, by NECATI OZISIK and L. F. SCHUTRUM.....	697
Discussion.....	715
Heat Gain, Determination of the Effectiveness of Window Shading Materials on the Reduction of Solar Radiation, by R. C. JORDAN and J. L. THRELKELD.....	683
Heat Gain through Windows Shaded by Metal Awnings, by NECATI OZISIK and L. F. SCHUTRUM.....	311
Discussion.....	320
Heat Pump Performance Bulletin.....	76
Heat Transfer on a Cylinder Surface in Humid Air Cross Flow, Frost Formation and:	
Part I—Experimental Study.....	213
Part II—Theoretical Study and Conclusions.....	229
Heat Transfer through a Joist Space, Downward, by P. M. CHUNG and C. E. LUND.....	245
Heating and Ventilation in Relation to Human Comfort, Research on, by THOMAS BEDFORD.....	83
Heating, Annual Energy Use for Electric Space, by R. L. BOYD.....	259
Heating by Hypocaust, by EDWIN D. THATCHER.....	269
Discussion.....	288
Heating Equipment, Pulsations in Single-Port Gas-Fired Residential, by C. F. SPEICH and A. A. PUTNAM.....	153
Heating Equipment, Suppression of Oscillations in Gas-Fired Residential, by C. F. SPEICH and A. A. PUTNAM.....	489
Heating, Supply Outlet Locations for Basement, by J. R. WRIGHT and D. R. BAHNFLETH.....	137
Hermetic Refrigerating Compressors, Estimating Water Content of Certain Dried but Uncharged, by H. M. ELSEY, J. B. KELLEY, and R. B. SHARPE.....	651
HERRINGTON, L. P., Discussion on Research on Heating and Ventilation in Relation to Human Comfort.....	97
HEWITT, G. W., F. F. TRUNZO, and G. J. BICH, Repeated Scrape Abrasion Testing of Enameled Wires in Gaseous and Liquid Refrigerants.....	675
HICK, F. K., M.D., Discussion on Metabolic Patterns in Stressful Environments.....	113
HIERS, C. R., Discussion on Evaluation of Filters for Removing Irritants from Polluted Air.....	415
Discussion on Proposed ASHRAE Standards for the Measurement of Sound from Equipment.....	611
HOPPER, W. F., Surface Odor Adsorption and Retention Properties of Surfaces.....	735

HORNE, GEORGE A., In Memoriam (1877-1959).....	749
Hot-Wire Anemometer, Omni-Directional Low-Speed, by J. F. KEMP.....	205
HUEBNER, W. O., Discussion on Heating by Hypocaust.....	288
Discussion on Omni-Directional Low-Speed Hot-Wire Anemometer.....	212
Humid Air Cross Flow, Frost Formation and Heat Transfer on a Cylinder Surface in:	
Part I—Experimental Study.....	213
Part II—Theoretical Study and Conclusions.....	229
HURTGEN, J. P., Discussion on Estimating Water Content of Certain Dried but Uncharged Hermetic Refrigerating Compressors.....	661
Hydrocarbon and Oil Refrigeration Systems, Acoustical Testing of Mufflers for Halogenated, by A. F. MARTZ, JR., J. L. MARTIN, and W. R. DANIELSON.....	479
Hydronics Bulletin.....	75
Hypocaust, Heating by, by EDWIN D. THATCHER.....	269

I

In Memoriam.....	745
Industrial Ventilation Bulletin.....	342
Inspectors of Election, Report of.....	74
Investigation and Control of Refrigerator Noise, by E. A. BAILLIF and J. P. LAUGHLIN.....	443
Discussion.....	468
Irritants from Polluted Air, Evaluation of Filters for Removing, by N. A. RICHARDSON and W. C. MIDDLETON.....	401

J

JENNINGS, B. H., and BARUCH GIVONI, Environment Reactions in the 80 to 105 F Zone.....	115
JENSON, E. H., Discussion on Proposed ASHRAE Standards for the Measurement of Sound from Equipment.....	611
JORDAN, R. C., and J. L. THRELKELD, Determination of the Effectiveness of Window Shading Materials on the Reduction of Solar Radiation Heat Gain.....	683

K

KAMIEN, C. Z., and O. W. WITZELL, Effect of Pressure and Temperature on the Viscosity of Refrigerants in the Vapor Phase.....	663
KELLEY, J. B., Discussion on Repeated Scrape Abrasion Testing of Enamelled Wires in Gaseous and Liquid Refrigerants.....	681
KELLEY, J. B., R. B. SHARPE, and H. M. ELSEY, Estimating Water Content of Certain Dried but Uncharged Hermetic Refrigerating Compressors.....	651
KEMP, J. F., Omni-Directional Low-Speed Hot-Wire Anemometer.....	205
KENNEDY, W. W., Discussion on Experimental Study of Grille Noise Characteristics.....	626
KERKA, W. T., Discussion on Experimental Study of Grille Noise Characteristics.....	625
KING, R. W., J. H. McNINCH, and R. J. McCRORY, Free Piston Compressor in an Air-Conditioning System.....	377
KINNEY, HARRY, Discussion on Experimental Study of Grille Noise Characteristics.....	626
KOESTEL, ALFRED, Discussion on Omni-Directional Low-Speed Hot-Wire Anemometer.....	212
KOESTEL, ALFRED, G. L. TUVE, and J. J. REINMANN, Evaluation of Three Room Air Distribution Systems for Summer Cooling.....	717

L

Large-Scale Wall Heat-Flow Measuring Apparatus, by K. R. SOLVASON.....	541
Discussion.....	550
LATTER, BRUCE, Discussion on Investigation and Control of Refrigerator Noise.....	469
LAUGHLIN, J. P., and E. A. BAILLIF, Investigation and Control of Refrigerator Noise.....	443

LAUGHLIN, J. P., Discussion on Proposed ASHRAE Standards for the Measurement of Sound from Equipment.....	610
LAWRIE, W. E., and G. J. SANDERS, Low Frequency Combustion Noise in Oil-Burning Equipment.....	181
LEBELL, D., W. B. DRAKE, and HARRY BUCHBERG, Load Calculations Using Prefabulated Admittance Functions.....	515
Transfer Admittance Functions for Typical Composite Wall Sections.....	523
LEE, B. H., Discussion on An Analysis of Turbine Driven Centrifugal Refrigeration Systems.....	353
LEE, J. C., Discussion on An Analysis of Turbine Driven Centrifugal Refrigeration Systems.....	353
Discussion on Comparison of Fluoroalkane Absorption Refrigerants.....	650
Discussion on Effects of Refrigerant Properties on Centrifugal Compressor Impeller Dimensions and Stage Performance.....	353
LEOPOLD, C. S., Discussion on Environment Reactions in the 80 to 105 F Zone	375
Discussion on Research on Heating and Ventilation in Relation to Human Comfort.....	129
LIEPIN, LEE, Discussion on Controlled Atmosphere Apple Storage Process and Its Requirements on Refrigeration Structures and Systems.....	99
LINSENMEYER, F. J., Discussion on Heating by Hypocaust.....	596
LIPSTEIN, NORMAN J., Discussion on Annual Energy Use for Electric Space Heating.....	288
Liquid Refrigerants, Repeated Scrape Abrasion Testing of Enamelled Wires in Gaseous and, by F. F. TRUNZO, G. J. BICH, and G. W. HEWITT.....	267
Load Calculations Using Prefabulated Admittance Functions, by W. B. DRAKE, HARRY BUCHBERG, and D. LEBELL.....	675
Discussion.....	515
LOCKLIN, D. W., C. F. SPEICH and A. A. PUTNAM, Joint Discussion on Low Frequency Combustion Noise in Oil-Burning Equipment.....	540
LOCKLIN, D. W., Discussion on A New Method of Chimney Design and Performance Evaluation.....	200
Discussion on Effect of Fuel Composition on Oil Burner Noise.....	440
Low Frequency Combustion Noise in Oil-Burning Equipment, by G. J. SANDERS and W. E. LAWRIE.....	632
Discussion.....	181
Low-Speed Hot-Wire Anemometer, Omni-Directional, by J. F. KEMP.....	199
LUND, C. E., and P. M. CHUNG, Downward Heat Transfer through a Joist Space.....	205
	245

M

MACORMACK, J. C., Discussion on Controlled Atmosphere Apple Storage Process and Its Requirements on Refrigeration Structures and Systems.....	597
Discussion on Large-Scale Wall Heat-Flow Measuring Apparatus.....	550
MARTIN, J. L., W. R. DANIELSON, and A. F. MARTZ, JR., Acoustical Testing of Mufflers for Halogenated Hydrocarbon and Oil Refrigeration Systems.....	479
MARTZ, A. F., JR., J. L. MARTIN, and W. R. DANIELSON, Acoustical Testing of Mufflers for Halogenated Hydrocarbon and Oil Refrigeration Systems.....	479
MARVEL, B. H., Experimental Study of Grille Noise Characteristics.....	613
MCCRORY, R. J., R. W. KING, and J. H. McNINCH, Free Piston Compressor in an Air-Conditioning System.....	377
MCKINLEY, R. W., Discussion on Condensation between the Panes of Double Windows.....	570
Discussion on Determination of the Effectiveness of Window Shading Materials on the Reduction of Solar Radiation Heat Gain.....	696
Discussion on Evaluation of Three Room Air Distribution Systems for Summer Cooling.....	732
Discussion on Heat through Glass with Roller Shades.....	715
MCNINCH, J. H., R. J. MCCRORY, and R. W. KING, Free Piston Compressor in an Air-Conditioning System.....	377
MEDON, F. E., Discussion on Free Piston Compressor in an Air-Conditioning System.....	391
Meeting Arrangements Committee, ASHRAE Annual Meeting, 1959 (Lake Placid, New York).....	348

Metabolic Patterns in Stressful Environments, by NELLO PACE.....	101
Discussion.....	113
Metal Awnings, Heat Gain through Windows Shaded by, by NECATI OZISIK and L. F. SCHUTRUM.....	311
MIDDLETON, W. C., and N. A. RICHARDSON, Evaluation of Filters for Removing Irritants from Polluted Air.....	410
MILLER, V. L., Discussion on Heat Gain through Windows Shaded by Metal Awnings.....	320
MIN, T. C., Discussion on A New Method for Calculating Radiant Exchanges.....	330
Discussion on Evaluation of Three Room Air Distribution Systems for Summer Cooling.....	733
MITTENDORFF, E. M., Discussion on Low Frequency Combustion Noise in Oil-Burning Equipment.....	199
MOFFATT, W. C., and W. G. COLBORNE, A New Method of Chimney Design and Performance Evaluation.....	431
Fundamental Analysis of Chimney Performance.....	417
Moist Materials, Thermal Conductivity Measurement of Dry and, by W. WOODSIDE.....	291
Morning After for Education, The, by DR. ERIC A. WALKER.....	333
Mufflers for Halogenated Hydrocarbon and Oil Refrigeration Systems, Acoustical Testing of, by A. F. MARTZ, JR., J. L. MARTIN, and W. R. DANIELSON.....	479
MUNGER, G. R., Discussion on Determination of the Effectiveness of Window Shading Materials on the Reduction of Solar Radiation Heat Gain.....	696
Discussion on Heat Flow through Glass with Roller Shades.....	715
Discussion on Load Calculations Using Pretabulated Admittance Functions and Transfer Admittance Functions for Typical Composite Wall Sections.....	540
MYLER, W. M., Discussion on Low Frequency Combustion Noise in Oil-Burning Equipment.....	199

N

NEUBAUER, L. W., and R. D. CRAMER, Solar Radiant Gains through Directional Glass Exposure.....	499
NEVINS, R. C., Discussion on Environment Reactions in the 80 to 105 F Zone.....	129
New Method for Calculating Radiant Exchanges, A, by BENJAMIN GEBHART.....	321
Discussion.....	329
New Method of Chimney Design and Performance Evaluation, A, by W. C. MOFFAT and W. G. COLBORNE.....	431
Discussion.....	439
Noise Characteristics, Experimental Study of Grille, by B. H. MARVET.....	613
Noise, Effect of Fuel Composition on Oil Burner, by W. A. BEACH, R. W. SAGE, and H. F. SCHROEDER.....	627
Noise from Compressors Used on Household Refrigerators, Some Methods for Investigating, by R. C. BINDER.....	471
Noise in Oil-Burning Equipment, Low Frequency Combustion, by G. J. SANDERS and W. E. LAWRIE.....	181
Noise, Investigation and Control of Refrigerator, by E. A. BAILLIF and J. P. LAUGHLIN.....	443
Notice of Special Meeting to all Members Entitled to Vote.....	10
NOTTAGE, H. B., Discussion on Supply Outlet Locations for Basement Heating.....	151
NOWAK, E. S., and A. GRANT WILSON, Condensation between the Panes of Double Windows.....	551

O

Odor Adsorption and Retention Properties of Surfaces, Surface, by W. F. HOPPER.....	735
Officers and Board of Directors (January 1959 to June 1959).....	31
Officers and Board of Directors (June 1959 to January 1961).....	32
Officers and Board of Directors (June 1961 to June 1962).....	33
Oil Burner Noise, Effect of Fuel Composition on, by W. A. BEACH, R. W. SAGE, and H. F. SCHROEDER.....	627
Oil-Burning Equipment, Low Frequency Combustion Noise in, by G. J. SANDERS and W. E. LAWRIE.....	181

Oil Refrigeration Systems, Acoustical Testing of Mufflers for Halogenated Hydrocarbon and, by A. F. MARTZ, JR., J. L. MARTIN, and W. R. DANIELSON	479
OLSON, EUGENE O., Discussion on Low Frequency Combustion Noise in Oil-Burning Equipment	202
Omni-Directional Low-Speed Hot-Wire Anemometer, by J. F. KEMP	205
Discussion	211
Order of Court for Consolidation	39
Oscillations in Gas-Fired Residential Heating Equipment, Suppression of, by C. F. SPEICH and A. A. PUTNAM	489
OURUSOFF, LEONID, Discussion on Comparison of Fluoroalkane Absorption Refrigerants	650
Outlet Locations for Basement Heating, Supply, by J. R. WRIGHT and D. R. BAHNFLETH	137
OZISIK, NECATI, and L. F. SCHUTRUM, Heat Flow through Glass with Roller Shades	695
Heat Gain through Windows Shaded by Metal Awnings	311

P

PACE, NELLO, Metabolic Patterns in Stressful Environments	101
Panes of Double Windows, Condensation between the, by A. GRANT WILSON and E. S. NOWAK	551
PENTZER, W. T., Discussion on Evaporative Cooling for Common Storages of Fruits and Vegetables	587
Petition for Consolidation	33
Piston Compressor in an Air-Conditioning System, Free, by R. J. McCROY, R. W. KING, and J. H. McNINCH	377
PLOEGER, C. E., Discussion on Acoustical Testing of Mufflers for Halogenated Hydrocarbon and Oil Refrigeration Systems	487
Polluted Air, Evaluation of Filters for Removing Irritants from, by N. A. RICHARDSON and W. C. MIDDLETON	401
POPYK, W. W., Discussion on Low Frequency Combustion Noise in Oil-Burning Equipment	200
Discussion on Pulsations in Single-Port Gas-Fired Residential Heating Equipment	179
POTTER, C. D., Discussion on Effect of Fuel Composition on Oil Burner Noise	633
Discussion on Solar Radiant Gains through Directional Glass Exposure	513
POUNTEY, C. H., JR., and D. W. SKIPWORTH, Automatic Computer for Fan Testing	393
President, Report of (Cecil Boling, ASHRAE)	341
President, Report of (E. R. Queer, ASHRAE)	49
Pressure and Temperature on the Viscosity of Refrigerants in the Vapor Phase, Effect of, by C. Z. KAMIEN and O. W. WITZELL	663
Pretabulated Admittance Functions, Load Calculations Using, by W. B. DRAKE, HARRY BUCHBERG, and D. LEBELL	515
PRIESTER, G. B., Discussion on Evaluation of Filters for Removing Irritants from Polluted Air	415
Probe for Thermal Conductivity Measurement of Dry and Moist Materials, by W. WOODSIDE	291
Program, ASHRAE Annual Meeting, 1959, (Lake Placid, New York)	343
65th Annual Meeting ASHRAE	78
Proposed ASHRAE Standards for the Measurement of Sound from Equipment, by C. M. ASHLEY	601
Discussion	610
Provisions of Certificate of Incorporation of ASHRAE	36
Provisions of Certificate of Incorporation of ASRE	38
PRUCHA, R. V., Discussion on Load Calculations Using Pretabulated Admittance Functions and Transfer Admittance Functions for Typical Composite Wall Sections	540
Pulsations in Single-Port Gas-Fired Residential Heating Equipment, by C. F. SPEICH and A. A. PUTNAM	153
Discussion	179

PUTNAM, A. A., and C. F. SPEICH, Pulsations in Single-Port Gas-Fired Residential Heating Equipment.....	153
Suppression of Oscillations in Gas-Fired Residential Heating Equipment.....	489
PUTNAM, A. A., D. W. LOCKLIN and C. F. SPEICH, Joint Discussion on Low Frequency Combustion Noise in Oil-Burning Equipment.....	200
Q	
QUEER, E. R., Report of President (ASHAE).....	49
R	
Radiant Exchanges, A New Method for Calculating, by BENJAMIN GEBHART.....	321
Radiant Gains through Directional Glass Exposure, Solar, by R. D. CRAMER and L. W. NEUBAUER.....	499
Radiation Heat Gain, Determination of the Effectiveness of Window Shading Materials on the Reduction of Solar, by R. C. JORDAN and J. L. THRELKELD.....	683
Reactions in the 80 to 105 F Zone, Environment, by B. H. JENNINGS and BARUCH GIVONI.....	115
Refrigerant Properties on Centrifugal Compressor Impeller Dimensions and Stage Performance, Effects of, by F. J. WIESNER, JR. and H. E. CASWELL.....	355
Refrigerants, Comparison of Fluoroalkane Absorption, by B. J. EISEMAN, JR.....	635
Refrigerants in the Vapor Phase, Effect of Pressure and Temperature on the Viscosity of, by C. Z. KAMIEN and O. W. WITZELL.....	663
Refrigerants, Repeated Scrape Abrasion Testing of Enamelled Wires in Gaseous and Liquid, by F. F. TRUNZO, G. J. BICH, and G. W. HEWITT.....	675
Refrigerating Compressors, Estimating Water Content of Certain Dried but Uncharged Hermetic, by H. M. ELSEY, J. B. KELLEY, and R. B. SHARPE.....	651
Refrigeration Structures and Systems, Controlled Atmosphere Apple Storage Process and Its Requirements on, by J. W. ZAHRADNIK.....	589
Refrigeration Systems, Acoustical Testing of Mufflers for Halogenated Hydrocarbon and Oil, by A. F. MARTZ, JR., J. L. MARTIN, and W. R. DANIELSON.....	479
Refrigeration Systems, An Analysis of Turbine Driven Centrifugal, by W. G. DORSEY, JR.....	349
Refrigerator Noise, Investigation and Control of, by E. A. BAILLIF and J. P. LAUGHLIN.....	443
Refrigerators, Some Methods for Investigating Noise from Compressors Used on Household, by R. C. BINDER.....	471
REICH, H. H., Discussion on Supply Outlet Locations for Basement Heating.....	151
REINMANN, J. J., ALFRED KOESTEL, and G. L. TUVE, Evaluation of Three Room Air Distribution Systems for Summer Cooling.....	717
Repeated Scrape Abrasion Testing of Enamelled Wires in Gaseous and Liquid Refrigerants, by F. F. TRUNZO, G. J. BICH, and G. W. HEWITT.....	675
Discussion.....	681
Report of Council (ASHAE).....	60
Report of President (C. E. Boling, ASHRAE).....	341
Report of President (E. R. Queer, ASHAE).....	49
Research on Heating and Ventilation in Relation to Human Comfort, by THOMAS BEDFORD.....	83
Discussion.....	97
Residential Heating Equipment, Pulsations in Single-Port Gas-Fired, by C. F. SPEICH and A. A. PUTNAM.....	153
Residential Heating Equipment, Suppression of Oscillations in Gas-Fired, by C. F. SPEICH and A. A. PUTNAM.....	489
Resolutions Committee, Report of (65th Annual Meeting, ASHAE).....	76
RICHARDSON, N. A., and W. C. MIDDLETON, Evaluation of Filters for Removing Irritants from Polluted Air.....	401
ROBERTSON, E. J., Discussion on Controlled Atmosphere Apple Storage Process and Its Requirements on Refrigeration Structures and Systems.....	596
Room Air Distribution Systems for Summer Cooling, Evaluation of Three, by J. J. REINMANN, ALFRED KOESTEL, and G. L. TUVE.....	717
ROUSHEY, R. E., Discussion on An Analysis of Turbine Driven Centrifugal Refrigeration Systems.....	353
ROZEN, G., Discussion on Environment Reactions in the 80 to 105 F Zone.....	131

SAGE, R. W., Discussion on Low Frequency Combustion Noise in Oil-Burning Equipment.....	202
SAGE, R. W., H. F. SCHROEDER, and W. A. BEACH, Effect of Fuel Composition on Oil Burner Noise.....	627
SANDERS, G. J., and W. E. LAWRIE, Low Frequency Combustion Noise in Oil-Burning Equipment.....	181
SAWYER, G. N., Discussion on Proposed ASHRAE Standards for the Measurement of Sound from Equipment.....	610
SCHROEDER, H. F., W. A. BEACH, and R. W. SAGE, Effect of Fuel Composition on Oil Burner Noise.....	627
SCHUTRUM, L. F., and NECATI OZISIK, Heat Flow through Glass with Roller Shades.....	695
SCHUTRUM, L. F., Discussion on Determination of the Effectiveness of Window Shading Materials on the Reduction of Solar Radiation Heat Gain.....	695
Heat Gain through Windows Shaded by Metal Awnings.....	311
Discussion on Solar Radiant Gains through Directional Glass Exposure.....	513
Shades, Heat Flow through Glass with Roller, by NECATI OZISIK and L. F. SCHUTRUM.....	695
SHARPE, R. B., H. M. ELSEY, and J. B. KELLEY, Estimating Water Content of Certain Dried but Uncharged Hermetic Refrigerating Compressors.....	651
Single-Port Gas-Fired Residential Heating Equipment, Pulsations in, by C. F. SPEICH and A. A. PUTNAM.....	153
Sixty-fifth Annual Meeting, 1959, ASHAE (Philadelphia, Pa.).....	47
SKIPWORTH, D. W., and C. H. POUNTNEY, JR., Automatic Computer for Fan Testing.....	393
SMITH, W. T., Discussion on Evaporative Cooling for Common Storages of Fruits and Vegetables.....	588
Solar Radiant Gains through Directional Glass Exposure, by R. D. CRAMER and L. W. NEUBAUER.....	499
Discussion.....	513
Solar Radiation Heat Gain, Determination of the Effectiveness of Window Shading Materials on the Reduction of, by R. C. JORDAN and J. L. THRELKELD.....	683
SOLING, S. P., Discussion on Effects of Refrigerant Properties on Centrifugal Compressor Impeller Dimensions and Stage Performance.....	376
SOLVASON, K. R., Discussion on A New Method for Calculating Radiant Exchanges.....	329
Discussion on Supply Outlet Locations for Basement Heating.....	152
SOLVASON, K. R., Large-Scale Wall Heat-Flow Measuring Apparatus.....	541
Some Methods for Investigating Noise from Compressors Used on Household Refrigerators, by R. C. BINDER.....	471
Sound from Equipment, Proposed ASHRAE Standards for the Measurement of, by C. M. ASHLEY.....	601
SPAUSCHUS, H. O., Discussion on Comparison of Fluoroalkane Absorption Refrigerants.....	649
Special Meeting December 1, 1958 (Chicago, Ill.).....	9
SPEICH, C. F., A. A. PUTNAM and D. W. LOCKLIN, Joint Discussion on Low Frequency Combustion Noise in Oil-Burning Equipment.....	200
SPEICH, C. F., and A. A. PUTNAM, Pulsations in Single-Port Gas-Fired Residential Heating Equipment.....	153
Suppression of Oscillations in Gas-Fired Residential Heating Equipment.....	489
STACHELEK, S. J., Discussion on Controlled Atmosphere Apple Storage Process and Its Requirements on Refrigeration Structures and Systems.....	597
Standards for the Measurement of Sound from Equipment, Proposed ASHRAE, by C. M. ASHLEY.....	601
Storage Process and Its Requirements on Refrigeration Structures and Systems, Controlled Atmosphere Apple, by J. W. ZAHRADNIK.....	589
Storages of Fruits and Vegetables, Evaporative Cooling for Common, by R. S. ASH.....	571
Story of Consolidation.....	1
Summer Cooling, Evaluation of Three Room Air Distribution Systems for, by J. J. REINMANN, ALFRED KOESTEL, and G. L. TUVE.....	717

SUMMERHAYS, R. L., Discussion on Controlled Atmosphere Apple Storage Process and Its Requirements on Refrigeration Structures and Systems.....	597
Discussion on Evaporative Cooling for Common Storages of Fruits and Vegetables.....	587
Supply Outlet Locations for Basement Heating, by J. R. WRIGHT and D. R. BAHNFLETH.....	137
Discussion.....	151
Suppression of Oscillations in Gas-Fired Residential Heating Equipment, by C. F. SPEICH and A. A. PUTNAM.....	489
Surface Odor Adsorption and Retention Properties of Surfaces, by W. F. HOPPER.....	735
SWANTON, J. R., Jr., Discussion on Controlled Atmosphere Apple Storage Process and Its Requirements on Refrigeration Structures and Systems.....	596
Symposiums on (ASHAE)	
Corrosion and Water Treatment (W. G. HOLE, Moderator).....	76
Heat Pump Performance (G. B. PRIESTER, Moderator).....	76
Hydronics (P. N. VINOTHER, Moderator).....	75

T

TAC Activities (ASHAE).....	65
TARLETON, F. L., Discussion on Estimating Water Content of Certain Dried but Uncharged Hermetic Refrigerating Compressors.....	661
Temperature on the Viscosity of Refrigerants in the Vapor Phase, Effect of Pressure and, by C. Z. KAMIEN and O. W. WITZELL.....	663
THATCHER, EDWIN D., Heating by Hypocaust.....	269
Thermal Conductivity Measurement of Dry and Moist Materials, by W. WOODSIDE.....	291
THREKELD, J. L., and R. C. JORDAN, Determination of the Effectiveness of Window Shading Materials on the Reduction of Solar Radiation Heat Gain.....	683
TOKACH, M. F., Discussion on Free Piston Compressor in an Air-Conditioning System.....	391
Transfer Admittance Functions for Typical Composite Wall Sections, by W. B. DRAKE, HARRY BUCHBERG, and D. LEBELL.....	523
Discussion.....	540
Treasurer's Report (J. H. FOX).....	50
TRUNZO, F. F., G. J. BICH, and G. W. HEWITT, Repeated Scrape Abrasion Testing of Enameled Wires in Gaseous and Liquid Refrigerants.....	675
Turbine Driven Centrifugal Refrigeration Systems, An Analysis of, by W. G. DORSEY, JR.....	349
TUVE, G. L., J. J. REINMANN, and ALFRED KOESTEL, Evaluation of Three Room Air Distribution Systems for Summer Cooling.....	717

V

Vapor Phase, Effect of Pressure and Temperature on the Viscosity of Refrigerants in the, by C. Z. KAMIEN and O. W. WITZELL.....	663
Vegetables, Evaporative Cooling for Common Storages of Fruits and, by R. S. ASH	571
Ventilation in Relation to Human Comfort, Research on Heating and, by THOMAS BEDFORD.....	83
VILD, D. J., Discussion on Heat Flow through Glass with Roller Shades.....	715

W

WALKER, DR. ERIC A., The Morning After for Education.....	333
WALKER, W. O., Discussion on Controlled Atmosphere Apple Storage Process and Its Requirements on Refrigeration Structures and Systems.....	596
Wall Heat-Flow Measuring Apparatus, Large-Scale, by K. R. SOLVASON.....	541
Wall Sections, Transfer Admittance Functions for Typical Composite, by W. B. DRAKE, HARRY BUCHBERG, and D. LEBELL.....	523
Water Content of Certain Dried but Uncharged Hermetic Refrigerating Compressors, Estimating, by H. M. ELSEY, J. B. KELLEY, and R. B. SHARPE.....	651

WIESNER, F. J., JR., and H. E. CASWELL, Effects of Refrigerant Properties on Centrifugal Compressor Impeller Dimensions and Stage Performance.....	355
WILE, D. D., Discussion on Investigation and Control of Refrigerator Noise.....	468
WILSON, A. G., Discussion on A New Method of Chimney Design and Performance Evaluation.....	440
Discussion on Controlled Atmosphere Apple Storage Process and Its Requirements on Refrigeration Structures and Systems.....	597
WILSON, A. GRANT, and E. S. NOWAK, Condensation between the Panes of Double Windows.....	551
Window Shading Materials on the Reduction of Solar Radiation Heat Gain, Determination of the Effectiveness of, by R. C. JORDAN and J. L. THRELKELD	683
Windows, Condensation between the Panes of Double, by A. GRANT WILSON and E. S. NOWAK.....	551
Windows Shaded by Metal Awnings, Heat Gain through, by NECATI OZISIK and L. F. SCHUTRUM.....	311
WITZELL, O. W., and C. Z. KAMIEN, Effect of Pressure and Temperature on the Viscosity of Refrigerants in the Vapor Phase.....	663
WOODSIDE, W., Thermal Conductivity Measurement of Dry and Moist Materials	291
WRIGHT, J. R., and D. R. BAHNFLETH, Supply Outlet Locations for Basement Heating.....	137
Z	
ZAHRADNIK, J. W., Controlled Atmosphere Apple Storage Process and Its Requirements on Refrigeration Structures and Systems.....	589
Discussion on Solar Radiant Gains through Directional Glass Exposure	513

